



Case review

Mental illness, violence and delusional misidentifications: The role of Capgras' syndrome in matricide



Felice Carabellese, M.D. Professor^a, Gabriele Rocca, M.D. Doctor^{b,*},
Chiara Candelli, PhD Doctor^a, Roberto Catanesi, M.D. Professor^a

^a Section of Criminology and Forensic Psychiatry, DIM, University of Bari, Italy

^b Section of Criminology and Forensic Psychiatry, DISSAL, University of Genoa, Italy

ARTICLE INFO

Article history:

Received 13 June 2013

Received in revised form

1 October 2013

Accepted 27 October 2013

Available online 1 November 2013

Keywords:

Forensic psychiatry

Matricide

Mentally disordered offenders

Capgras' delusion

Risk assessment

ABSTRACT

Background: Violent behavior has frequently been reported in cases of Capgras' delusion, a misidentification syndrome characterized by the false belief that imposters have replaced people familiar to the individual.

Aims: To better understand the relationship between Capgras' syndrome and violence.

Method: After a brief overview of the scientific knowledge of delusional misidentification syndromes, we present two cases of psychotic sons suffering from this kind of delusion who killed their mothers and we analyzed the phenomenology of Capgras' delusion in-depth, focusing on the role of this syndrome in the etiology of violence.

Results: Capgras' syndrome may be a specific risk factor for violence towards others, particularly the murder of the delusionally misidentified person.

Conclusions: Looking for the signs of Capgras' syndrome may be crucial to assessing the risk of violence in mentally disordered patients.

© 2013 Elsevier Ltd and Faculty of Forensic and Legal Medicine. All rights reserved.

1. Introduction

Studies on the relationship between violence and mental illness¹ have amply documented an increased risk of violent acts among individuals with schizophrenia² and an increased risk of homicide in particular.³ The preponderance of studies that have analyzed the relationship between schizophrenia and violence have found a significant positive correlation between the presence of psychotic symptoms and violent behavior.⁴ This association appears to be more prominent during first-episode psychosis than in later stages of the illness.⁵ More specifically, Nielssen and Large⁶ reported a 15-fold higher rate of homicide in patients with untreated psychosis than in patients receiving adequate anti-psychotic treatment.

Considerable evidence suggests that the relationship between violence and schizophrenia is motivated and directed by specific constellations of psychotic symptoms, which primarily belong to the class of positive symptoms.⁷ Delusional symptoms such as persecutory ideations,⁸ threat/control-override symptoms,⁹

command hallucinations and hallucinations of threatening content¹⁰ have all proved to be significant predictors of violence and aggression among patients.

Some studies have indicated that individuals suffering from delusional misidentification syndromes constitute a sub-category of psychiatric patients who can pose significant danger to others,¹¹ as they may become verbally threatening and violent as a result of their delusional misidentification.¹²

Delusional Misidentification Syndromes (DMS) are a group of phenomena whereby patients misidentify familiar persons, objects, or themselves, believing that they have been replaced or transformed.¹³ These syndromes are delusional because the misidentifications are false and are not correctable by experience or reason. DMS are relatively rare psychopathologic phenomena, occurring in about 4% of all psychiatric inpatients,¹⁴ with most cases occurring in schizophrenia and in patients with neurodegenerative diseases.¹⁵

Various studies have proposed psychodynamic and neuro-physiological interpretations for DMS.

Psychodynamic theories consist of 'Ambivalence Theory',¹⁶ 'Depersonalisation Theory'¹⁷ and 'Regression Theory'.¹⁸ Neuro-cognitive hypotheses focus on right hemispheric dysfunction,¹⁹ face-recognition processing abnormalities²⁰ and focal structural cerebral abnormalities.²¹

* Corresponding author. Departmental Section of Criminology and Forensic Psychiatry, DISSAL, University of Genoa, Via A. de Toni 12, Genoa 16132, Italy. Tel.: +39 0103537893.

E-mail address: gabriele.rocca@unige.it (G. Rocca).

To date, many different sub-types of DMS have been described, but most authors categorize them according to four main syndromes (see Table 1). Most reports in the literature are related to Capgras' syndrome, which is the best-known and the one most frequently related to violence and homicide.^{22,23}

To better understand the role of Capgras' delusion in the etiology of violence by mentally disordered patients and to highlight the importance of specific violence risk assessment in DMS, we present two cases of matricide by psychotic sons in which the delusional misidentification was crucial in the causation of the criminal behaviors.

2. Case 1

At the time of the matricide, Mr. E was 31 years old, had been married for two years and had a 10-month-old daughter. Ever since his childhood, he had displayed a solitary, extravagant behavior. He was, however, very close to his mother, in whom he confided everything and with whom he spent much of his time. On leaving secondary school, he went to work in the country with his father. The father, who was 67 years old at the time of the homicide, was a farmer who was intensely involved in his work and little involved in family life.

Mr. E's mother (61 years old when she was killed) was a housewife. For years, she had suffered from a chronic psychotic disorder, which was quite efficaciously treated pharmacologically. She was described by her children as a very apprehensive mother, especially towards Mr. E. Indeed, even after getting married, Mr. E. continued to have his own bedroom in his mother's house and would often go there to take a nap after lunch.

At the age of 18 years, Mr. E. entered into a homosexual relationship with an older man, a relationship that was strongly opposed by the family. Subsequently, Mr. E. married a young woman chosen for him by his mother.

Mr. E's clinical history began on the day of his birthday, seven years before the murder. He stripped off in the village square and shouted to the onlookers his devotion to his elderly lover, even though their relationship had ended by then. He was hospitalized with a diagnosis of paranoid schizophrenic disorder.

In the following years, he was hospitalized several times in psychiatric facilities for acute psychotic episodes, the symptoms of which were mainly delusions with a mixed content of grandeur and persecution and auditory hallucinations consisting of a running commentary on events and voices in conversation, but in the absence of delusional misidentifications. From the onset of his illness, Mr. E. never displayed any aggressive behavior towards others, especially towards his mother.

After a few years of relative relief, Mr. E. was again hospitalized a few months before the matricide. He reported seeing people as if they were wearing masks, behind which, in reality, the devil was

hiding. After being discharged two months later, Mr. E became taciturn and spent much of his time at his mother's house, lying on his bed in the dark.

The matricide took place on the day of Mr. E's birthday.

During the subsequent investigations, Mr. E described the motive for the killing as follows: *«I didn't shoot my mother; I shot the Frenchman. I had been thinking of doing it for some time because I am Jesus Christ and was sent into this world to defeat evil...»*.

He later explained that his brain was really a computer and that his thoughts were transmitted to others through the air. Once people had picked up his thoughts, they would give him their trust and support, thereby revealing to him his true divine nature. Not everyone did so, however; some, whom he defined as 'the bandits', had not trusted in him and had done everything possible to annihilate him. These evil creatures were led by 'the Frenchman', whom Mr. E. described as a powerful and handsome man who was able to take on the appearance of other people whenever he wished.

About a month before the murder, Mr. E realized that, since his birth, his mother had been replaced by the 'Frenchman', who had maintained only the woman's outward appearance. Mr. E had therefore been cohabiting with evil right from the start; and it was his task to defend the world from it. He had succeeded in his mission up until a few months before the murder; it was then that he realized that 'the Frenchman' was annihilating him.

Thus, the idea began to grow in Mr. E's mind that the only way he could save the world and himself was to kill 'the Frenchman'. This idea became a conviction during Mr. E's last hospitalisation, on the occasion of a visit by his mother and his wife. That day, he received confirmation that his mother really was 'the Frenchman'. Indeed, while they were together, an elderly lady approached them, but was immediately sent away by the mother. At that moment, Mr. E realized that the elderly lady was his true mother and that 'the Frenchman' was keeping them apart.

On the day of the murder, Mr. E. got up and went to work until lunchtime. He had lunch at home with his wife and daughter, after which he left the house and, after driving around in his car, went to a gun shop, where he bought a box of cartridges. He hid three cartridges in the car, but took the rest with him to his mother's house, where his father's shotgun was kept. On the way, his attention was caught by a billboard advertising beer, on which there was a picture of a young woman – identified as the Madonna – who told him: *«If you can't go through with it, have a beer»*.

Mr. E. had not planned to kill his mother that day, but rather on the 23rd of the same month; indeed, during his last hospitalisation, he had seen a television program in which a police officer had said, *«23rd, very strong poison»*. However, that day, having reached his mother's house, he chatted with her for a while, before going to his room to sleep for about an hour. His sleep was troubled by voices which told him, *«Do it now»*. Thinking about the young woman on the advertising billboard, he got up from his bed, went out and bought three beers. On returning, he went up into the attic, where the dismantled shotgun was kept, and drank all three beers. He then went downstairs into the kitchen, where his mother was standing at the sink washing the dishes, with her back to him. *«Frenchman»*, he shouted. As soon as she turned round, he fired two shots at close range. After the shooting, he slowly walked away and returned to his own house, where he was later found in bed by the police.

3. Case 2

Mr. V was 21 years old when he killed his mother. He had no history of psychiatric disorders, nor had he manifested any previous violence. The third of three male children, he had a twin brother. His father was a manual worker and his mother a housewife. During his childhood, he was a silent, solitary boy, affectively

Table 1
Delusional misidentification syndromes.¹³

Capgras' syndrome	Delusional denial of identification of familiar people and their replacement by doubles who are physically—but not psychologically—identical to the misidentified people
Frégoli syndrome	Delusional belief that a familiar person acquires different physical identities, while the psychological identity remains the same
Intermetamorphosis syndrome	Delusional belief that the familiar person and the stranger have not only psychological but also physical similarities and that the misidentified people interchange with each other
The syndrome of subjective doubles	Delusional conviction of other people's physical transformation into the patient's own self

close only to his twin brother. As an adolescent, because of cryptorchidism, he began to have relationship difficulties with his peers (*«I didn't feel like I was the same as the others»*) and became an object of derision. He progressively isolated himself from his peers; only his twin brother remained close to him.

At the age of 18 years, he underwent surgery to correct his problem, but this did not put an end to his relationship difficulties. On the contrary, the situation worsened; the feeling that he was being ridiculed became constant. He began to feel that he was under observation, that other people *«always knew what I was doing»* and, especially, that they were *«always talking about me»*. He also began to hear mocking voices and to believe that he could read other people's minds.

Having realized that there was something wrong with their son, Mr. V's parents took him to the family doctor a few months before the homicide. The doctor interpreted the problem as an episode of depression and prescribed amitriptyline. After an initial improvement, the perception disorders and persecutory fears returned and continued to worsen.

A few days before the murder, Mr. V. went to the seaside on vacation with the whole family. There, he began to feel very *“nervous”*; the voices had become insistent and he often felt physically threatened. Suddenly, the idea came to him that he *«was God and had to save the world. They mock me like they mocked Christ; the devil must be behind this»*.

His preoccupation with the devil came to obsess him, and the figure of his mother became particularly terrifying. He therefore concluded that the devil had replaced his mother and wanted to kill him, in collusion with his twin brother.

He described the evening of the matricide as follows: *«... I didn't want to sleep that night; I wanted to stay awake because I was afraid... When I saw my mother open the fridge, I got scared and ran into the corner of the balcony, shouting... She had eyes like an owl... I realized that my mother was Satan; he had taken possession of her. She was already dead; my uncle and my brother had killed her and Satan had taken possession of her body... What I saw in front of me was my mother's body, but it wasn't her. I looked at the moon. An eclipse was just about to start... I started shouting “Die, Satan” and I kept repeating it over and over... Then I grabbed him by the legs and I threw him out. He looked like a dummy... I know she died first; maybe Satan came out of her while she was falling... I know because, when she hit the ground, I saw another person, like my mother, next to the body, but she had the feet of an animal... I killed Satan to save the world...»*.

4. Discussion

Matricide, the killing of mothers by their biological children, is an infrequent but shocking form of homicide, which is classically considered to be committed by individuals with severe psychiatric disorders. In particular, it seems to be more common among individuals with schizophrenia or other psychoses,^{24,25} to the extent that matricide was once referred to as *‘the schizophrenic crime’*.²⁶

Mentally disordered offenders are frequently under the influence of psychotic symptoms (i.e. delusions or hallucinations) at the time of the crime.²⁷ Persecutory paranoid motivations have been implicated as a key factor in acts of violence toward parents,²⁸ as well as delusions characterized by the belief that the mother is threatening or controlling her child's thoughts.⁸ With regard to hallucinations, studies have provided evidence that command hallucinations are associated with a propensity to execute violent acts based on those commands.²⁹ The risk of violence appears to be highest in untreated individuals during first-episode psychosis.³⁰

Little research has addressed the question of whether DMS may play a peculiar role in the violence-mental illness relationship and, if so, how.

In their comparative study, Bourget et al.²⁵ showed that patients with Capgras' syndrome are more likely to adopt violent behavior or to commit parricide, because the individual no longer views the misidentified person as a close relative. Ahn et al. confirmed the DMS-violence relationship,³¹ stressing a possible triggering role of Capgras' delusion in the etiology of violence particularly among schizophrenic patients. However, the phenomenology of this relationship remains unclear.

Capgras' syndrome (CS) is the most common form of delusional misidentification. It is so named after Jean Marie Joseph Capgras (1873–1950), a French psychiatrist, who first reported this condition in 1923 in a patient who believed that her family and other individuals in her entourage had been replaced by identical doubles.³² Since 1923, Capgras' delusion has been described in association with various psychiatric conditions, organic illnesses and neurological diseases.³³ With regard to mental disorders, it is estimated to occur in up to 4% of patients with schizophrenia, especially in the paranoid subtype.²³

Over the years, various theories have been proposed to explain CS, ranging from explanations based on psychodynamic concepts and principles³⁴ to neuropsychological approaches based on brain dysfunctions, predominantly in the right hemisphere.³⁵

In addition to the extensive study of CS from phenomenological, psychodynamic and biological perspectives, specific attention has also been paid to the issue of the relationship between violence and CS.²² There are numerous reports of cases of violent behavior in CS³⁶ and a growing number of reports indicate that the presence of CS may exacerbate the risk of acting aggressively.³⁷

On comparing two groups of patients with psychosis and aggressive behaviors, one with CS and the other with other types of delusion, Silva et al.³⁸ found that those with CS more often had generalized hostility and a previous history of violent behavior than the control group.

With regard to homicide, Nestor et al.³⁹ found a higher incidence of CS among forensic psychiatric patients with psychotic disorders who had committed murder than among other perpetrators. It has also been reported that the victims of CS killings are much more likely to be family members.⁴⁰

As in our cases, most of the reports of CS-related homicide describe male patients.²³ Moreover, they highlight the fact that CS delusions often exist for some time before the act and that the ensuing violence is usually well planned.¹²

Other factors that may be important in evaluating the potential for violent behavior in patients with CS are the degree of threat perceived by the patient from the erroneously identified person⁴¹ and the coexistence of alcohol or substances abuse.⁴²

Despite this evidence, however, relatively little forensic attention has been paid to the role of Capgras' delusion in the progression to severely violent acts.

Silva et al.⁴³ claim that the killing of the delusionally misidentified person should be viewed as a late step in a long-term process of delusional misidentification of others. Furthermore, these authors have highlighted the level of fear and/or anger toward the delusionally misidentified objects as a key factor in the development of violent escalation. On the other hand, individuals with CS may also harbor 'silent' delusions and provide no verbal threats before an unexpected physical attack.⁴⁴ This is exemplified by our two cases, both of whom had a diagnosis of paranoid schizophrenia and exhibited persecutory delusions toward the misidentified objects.

In case 1, Mr. E had a long history of schizophrenia, with numerous hospitalisations in psychiatric facilities, during which several different psychotic symptoms emerged, though never Capgras' delusion. Moreover, Mr. E had never displayed any aggressive behavior towards others, much less towards his mother.

In reality, his feelings towards her were ambivalent: on the one hand, he was closely bound to her, entrusting all his thoughts to her and seeking her help whenever he had a problem; on the other hand, he thought she was interfering in his life and in his choices, and especially he blamed her for having come between him and the elderly gentleman to whom he had been sentimentally bound years earlier.

Interestingly, despite his long years of illness, the gravity of his disorder and of the symptoms he manifested, and his numerous hospitalisations, precipitated not least by his frequent noncompliance with drug therapy, only when Mr. E. had reconstructed his life according to the complex pattern linked to his delusional misidentification did the figure of his mother become a persecutory and anguishing object. And it was when Mr. E. had become completely convinced that his mother was no longer her real self, but 'the Frenchman', that he became convinced that the only solution was to kill him.

Also in case 2, although Mr. V's psychotic picture had arisen less dramatically and over a shorter time, the decisive moment in the genesis of the matricide was that of the structuring of the Capgras delusion. Specifically, only when Mr. V saw his mother's 'owl's eyes' and realized, in his distorted reality, that Satan had taken possession of the body of his mother, who was long dead, was he prompted to action. In this case, however, the act was more impulsive, unplanned and took place within a framework of persecutory anguish of great intensity.

In both cases, therefore, we can observe that the typical psychotic motivation to matricide⁴⁵ – the physical elimination of a figure that is perceived as burdensome and intrusive – can only be realized in concomitance with a peculiar transformation of reality: Capgras' delusion.

Psychodynamic explanations may help us to understand the association between violence and CS. Specifically, when ego defense mechanisms are insufficient to contain the individual's anger, and the misidentified objects are viewed as sufficiently bad, the individual's normal impediments to violence may be removed and the likelihood of violent action will increase, since the anger appears to be justified from the delusional perspective.²²

Neurocognitive theories offer an alternative explanation based on subjective abnormalities in face processing. Specifically, patients suffering from delusional misidentification may experience facial changes in themselves, leading them to conclude that others may be causing the unwanted changes. They may also see facial changes in others and become fearful that the alleged new identities may attack them.⁴⁶ Indeed, the mechanisms by which CS individuals may become dangerous are still unclear and are likely to be multifactorial.

Our case reports show that the degree of threat perceived by the patients from the delusionally misidentified objects is the most important factor in determining the risk of committing violent acts. Impulsivity and dissociation might also play a role in the process of acting out.

On the whole, understanding the role of Capgras delusion in the progression to severely violent acts may help to elucidate factors of potential significance in the causation of dangerous behaviors. In particular, careful evaluation of misidentification symptoms may help to assess the risk of violence by psychotic individuals. Furthermore, as highlighted by Silva et al.,³⁷ the early recognition of misidentification phenomena may be a useful indicator in managing the dangerousness of the delusional person in inpatient or correctional facilities. Moreover, a better understanding of the neurobiological basis of CS and of DMS-related aggression may provide an opportunity for better treatment and management.

In conclusion, there is a need to continue research on the relationship between violence and DMS. Future systematic studies of

large numbers of cases may improve our understanding of the psychology of aggression in psychosis.

Ethical approval

None declared.

Funding

None.

Conflict of interest

None.

References

- Catanesi R, Carabellese F, Troccoli G, Candelli C, Grattagliano I, Solarino B, et al. Psychopathology and weapon choice: a study of 103 perpetrators of homicide or attempted homicide. *Forensic Sci Int* 2011;**209**:149–53.
- Fazel S, Gulati G, Linsell L, Geddes JR, Grann M. Schizophrenia and violence: systematic review and meta-analysis. *PLoS Med* 2009;**6**(8):e1000120.
- Bennett DJ, Ogloff JR, Mullen PE, Thomas SD, Wallace C, Short T. Schizophrenia disorders, substance abuse and prior offending in a sequential series of 435 homicides. *Acta Psychiatr Scand* 2011;**124**:226–33.
- Fazel S, Grann M, Carlstrom E, Lichtenstein P, Langstrom N. Risk factors for violent crime in schizophrenia: a national cohort study of 13, 806 patients. *J Clin Psychiatry* 2009;**70**(3):362–9.
- Nielssen O, Large M. Rates of homicide during the first episode of psychosis and after treatment: a systematic review and meta-analysis. *Schizophrenia Bull* 2010;**36**(4):702–12.
- Large M, Nielssen O. Violence in first-episode psychosis: a systematic review and meta-analysis. *Schizophr Res* 2011;**125**(2–3):209–20.
- Bo S, Abu-Akel A, Kongerslev M, Haahr UH, Simonsen E. Risk factors for violence among patients with schizophrenia. *Clin Psychol Rev* 2011;**31**:711–26.
- Bjorkly S. Psychotic symptoms and violence toward others – a literature review of some preliminary findings part 1. *Delusions Aggress Violent Beh* 2002;**7**:605–15.
- Nederlof AF, Muris P, Hovens JE. Threat/control-override symptoms and emotional reactions to positive symptoms as correlates of aggressive behaviour in psychotic patients. *J Nerv Ment Dis* 2011;**199**:342–50.
- Bjorkly S. Psychotic symptoms and violence toward others – a literature review of some preliminary findings part 2. *Hallucinations Aggress Violent Beh* 2002;**7**:617–31.
- Catanesi R, Carabellese F, Candelli C, Valerio A, Martinelli D. Violent patients: what Italian psychiatrists feel and how this could change their patient care. *Int J Offender Ther* 2009;**54**(3):441–7.
- De Pauw KW, Szulecka TK. Dangerous delusions. Violence and the misidentification syndromes. *Brit J Psychiat* 1988;**152**:91–6.
- Christodoulou GN. The delusional misidentification syndromes. *Brit J Psychiat* 1991;**14**:65–9.
- Kirov G, Jones P, Lewis SW. Prevalence of delusional misidentification syndromes. *Psychopathology* 1994;**27**(3–5):148–9.
- Harciarek M, Kertesz A. The prevalence of misidentification syndromes in neurodegenerative diseases. *Alzheimer Dis Assoc Disord* 2008;**22**:163–9.
- Fishbain DA, Schiffman J. The daughter as the principal 'double' in Capgras' syndrome: psychodynamic correlates. *Am J Psychiatry* 1986;**40**:607–11.
- Frances A, Sacks M, Aronoff MS. Depersonalisation: a self-relations perspective. *Int J Psychoanal* 1977;**58**:325–33.
- Todd J. The syndrome of Capgras. *Psychiat Quart* 1967;**31**:250–61.
- Ellis HD, De Pauw KW. The cognitive neuropsychiatric origins of Capgras delusion. In: David AS, Cutting JC, editors. *The neuropsychology of Schizophrenia*. Hove: Lawrence Erlbaum; 1994. p. 317–35.
- Young AW, Reid I, Wright S, Hellawell DJ. Face-processing impairment and the Capgras delusion. *Br J Psychol* 1993;**162**:695–8.
- Absher JR, Oberg G, Benson D. Capgras' syndrome with focal frontal lesions. *Neurology* 1992;**42**(3 Suppl.):224–32.
- Silva JA, Leong GB, Weinstock R, Boyer CL. Capgras syndrome and dangerousness. *Bull Am Acad Psych Law* 1989;**17**:5–14.
- Bourget D, Whitehurst L. Capgras syndrome: a review of the neurophysiological correlates and presenting clinical features in cases involving physical violence. *Can J Psychiatry* 2004;**49**(11):719–25.
- Campion J, Cravens JM, Rotholz A, Weinstein HC, Covan F, Alpert M. A study of 15 matricidal men. *Am J Psychiatry* 1985;**142**:312–7.
- Bourget D, Gagné P, Labelle ME. Parricide: a comparative study of matricide versus patricide. *J Am Acad Psychiatry Law* 2007;**35**(3):306–12.
- Gillies H. Murder in the west of Scotland. *Br J Psychiat* 1965;**111**:1087–94.
- Liettu A, Saavala H, Hakko H, Räsänen P, Joukamaa M. Mental disorders of male parricidal offenders: a study of offenders in forensic psychiatric examination in Finland during 1973–2004. *Soc Psychiatry Psychiatr Epidemiol* 2009;**44**:96–103.
- Krakowski M, Volavka J, Brizer D. Psychopathology and violence: a review of literature. *Compr Psychiatry* 1986;**27**(2):131–48.

29. Nolan KA, Czobor P, Roy BB, Platt MM, Shope CB, Citrome LL, et al. Characteristics of assaultive behaviour among psychiatric inpatients. *Psychiat Serv* 2003;**54**(7):1012–6.
30. Hodgins S, Riaz M. Violence and phases of illness: differential risk and predictors. *Eur Psychiatry* 2011;**26**(8):518–24.
31. Ahn B-H, Kim J-H, Oh S, Choi SS, Ahn SH, Kim SB. Clinical features of parricide in patients with schizophrenia. *Aust Nz J Psychiat* 2012;**46**:621–9.
32. Capgras J, Reboul-Lachaux J. The illusion of similarities in a systematized chronic delirium. *Bull Soc Clin Méd Mentale* 1923;**2**:6–16.
33. Edelstyn NMJ, Oyeboode F. A review of the phenomenology and cognitive neuropsychological origins of the Capgras syndrome. *Int J Geriatr Psychiatry* 1999;**14**:48–59.
34. Sinkman A. The syndrome of Capgras. *Psychiatry* 2008;**71**:371–8.
35. Josephs KA. Capgras syndrome and its relationship to neurodegenerative disease. *Arch Neurol* 2007;**64**:1762–6.
36. Casu G, Cascella N, Maggini C. Homicide in Capgras' syndrome. *Psychopathology* 1994;**27**:281–4.
37. Silva JA, Leong GB, Weinstock R. The dangerousness of persons with misidentifications syndromes. *Bull Am Acad Psychiatry Law* 1992;**20**:77–86.
38. Silva JA, Leong GB, Weinstock R, Klein RL. Psychiatric factors associated with dangerous misidentification delusions. *Bull Am Acad Psych Law* 1995;**23**:53–61.
39. Nestor PG. Neuropsychological and clinical correlates of murder and other forms of extreme violence in a forensic psychiatric hospital. *J Nerv Ment Dis* 1992;**180**:418–23.
40. Shaw J, Appleby L, Amos T, McDonnell R, Harris C, McCann K, et al. Mental disorder and clinical care in people in people convicted of homicide: national clinical survey. *Br Med J* 1999;**318**:1240–4.
41. Aziz MA, Razik GN, Donn JE. Dangerousness and management of delusional misidentification syndrome. *Psychopathology* 2005;**38**:97–102.
42. Thompson AE, Swam M. Capgras syndrome presenting with violence following heavy drinking. *Brit J Psychiat* 1993;**162**:692–4.
43. Silva JA, Leong GB, Weinstock R. Misidentification syndromes, aggression and forensic issues. In: Schlesinger LB, editor. *Exploration in criminal psychopathology: clinical syndromes with forensic implications*. Springfield: Thomas; 1996. p. 345–62.
44. Silva JA, Leong GB, Weinstock R, Sharma KK, Klein RL. Delusional misidentification syndromes and dangerousness. *Psychopathology* 1994;**27**:215–9.
45. Buchanan A, Reed A, Wessely S, Garety P, Taylor P, Grubin D, et al. Acting on delusions: II. The phenomenological correlates of acting on delusions. *Brit J Psychiat* 1993;**163**:77–81.
46. Silva JA, Leong GB, Weinstock R, Wine DB. Delusional misidentification and dangerousness: a neurobiologic hypothesis. *J Forensic Sci* 1993;**38**:904–13.